ANNUAL REPORT 2010-2011

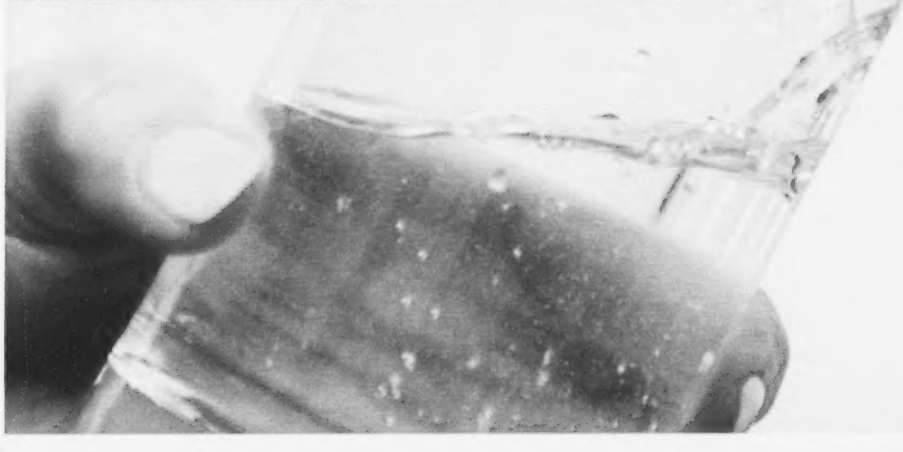
CHIEF DRINKING WATER INSPECTOR











Ontario

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Information on individual inspection ratings and drinking water quality results for municipal residential drinking water systems and details of orders and convictions for drinking water systems and licensed laboratories can be found on the Drinking Water Ontario website at **www.ontario.ca/drinkingwater.**

Message from the **CHIEF DRINKING WATER INSPECTOR**

I am pleased to share with you Ontario's 2010-11 drinking water quality results. The results, once again, reinforce our commitment to providing high quality drinking water as well as demonstrate a continued upward trend in performance improvement in overall systems ratings.

Ontario continues to be a world leader on the environmental stage in drinking water protection, conservation and innovative clean water technologies. Our programs complement Ontario's rigorous legislative requirements. Together, these comprehensive measures and regulations help ensure the safety of our drinking water in Ontario. In reading the report, you will also find that Ontario continues to set the bar for excellence in drinking water protection.

To verify that drinking water meets the legislative requirements and provincial standards, samples are tested by designated laboratories on a regular basis. In 2010-11, more than 639,000 individual tests were submitted that met provincial standards.

On the source protection front, all source protection committees in Ontario have submitted their assessment reports and are now developing their source protection plans. In addition, all Ontario municipal drinking water system owners have now received their final licences.



According to the 2011 Canadian Water Attitudes study, commissioned by RBC and Unilever Canada, 91 per cent of Ontarians are confident about the safety and quality of their drinking water.

Together with you and our many partners, we will continue our efforts to ensure the sustainability and safety of Ontario's water sources for generations to come.

John Stager,
Chief Drinking Water Inspector
Ministry of the Environment

Message from the

CHIEF MEDICAL OFFICER OF HEALTH

Small Drinking Water Systems Program Update

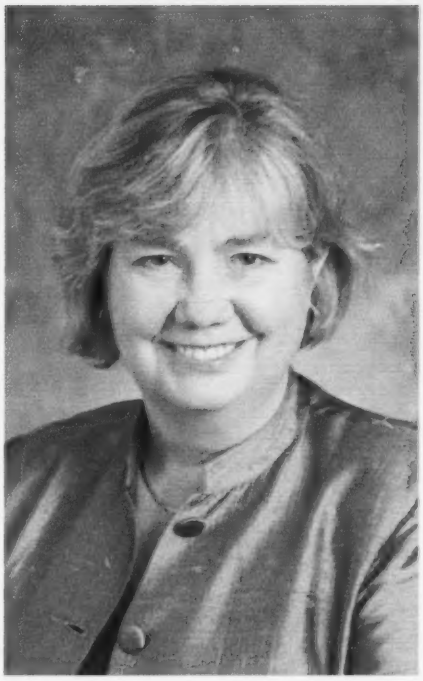
The Ministry of Health and Long-Term Care shares its commitment to excellence with the Ministry of the Environment and its partners in helping to ensure the safety of our drinking water.

Since oversight responsibility of Ontario's small drinking water systems was transferred to the Ministry of Health and Long-Term Care from the Ministry of the Environment on December 1, 2008, we have undertaken a comprehensive and collaborative approach to implementing the Small Drinking Water Systems Program. I would like to commend the efforts of the local boards of health and operators of small drinking water systems for their efforts in safeguarding drinking water across the province.

Together with our local boards of health, we have made great strides in conducting risk assessments on small drinking water systems. We have come a long way in identifying the risks that may affect the quality of our water and have developed strategies to monitor and maintain safe drinking water in the province.

By developing a risk-based approach for the oversight of small drinking water systems, system operators and local boards of health have partnered using local solutions to help provide safe drinking water to the people of Ontario.

Ontario is fortunate to have clean drinking water for its citizens, visitors and businesses. Safe water is everyone's responsibility and we



look forward to doing our part in protecting this important resource through the implementation and continued monitoring of small drinking water systems across Ontario.

Arlene King, MD, MHSc, FRCPC
Chief Medical Officer of Health
Ministry of Health and Long-Term Care

For more information about the Ministry of Health and Long-Term Care's Small Drinking Water Systems Program, please visit: www.health.gov.on.ca/english/public/program/pubhealth/safewater/safewater_resources.html. You can also read the 2010-11 Small Drinking Water Systems Program Results section of this report.


HAVING
CONFIDENCE
IN YOUR
DRINKING WATER

WHAT'S IN THIS REPORT

You are about to discover how Ontario's drinking water is among the best protected in the world, and understand why you can have confidence in the quality of your drinking water.

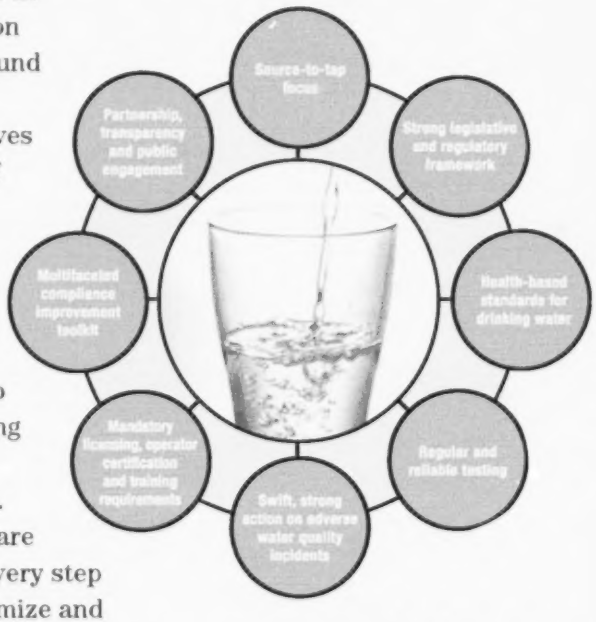
The first part of my report highlights some of the successes the Ministry of the Environment and our drinking water partners have achieved in 2010-2011. As you read through it, you will learn about our measures to protect Ontario's municipal drinking water sources and how we are supporting local rural well owners. My report also explains key ministry programs that help ensure our regulated drinking water systems continue to deliver safe, high quality tap water to our homes, schools and businesses. These programs focus on key protection activities such as inspecting Ontario's drinking water systems and laboratories, licensing regulated municipal drinking water systems, and training system operators.

In the latter part of my report you can find information about the quality of Ontario's drinking water, and results of ministry inspections of drinking water systems and laboratories from April 1, 2010 to March 31, 2011.

OUR DRINKING WATER SAFETY NET

Did you know that Ontario is recognized as a leader in drinking water protection among jurisdictions around the world? Our award-winning approach involves an extensive network of safeguards to protect public health — our drinking water safety net (see **Figure 1**). It is an innovative, world-class system designed to protect Ontario's drinking water from the source until it reaches your tap. It helps to ensure there are safeguards in place at every step of the process that minimize and address risks to the quality and quantity of our drinking water. The details of the eight key elements of the safety net can be found on Drinking Water Ontario.

Figure 1: The Drinking Water Safety Net



Know that we — and all our drinking water partners — remain committed to providing you with the safest possible drinking water as we continuously strive for excellence.

I am very pleased with the progress the ministry and our partners have made to continue to strengthen our safety net and I would like to share some of our key achievements.

- Your drinking water continues to be of very high quality. For 2010-11, 99.87 per cent of the drinking water tests from municipal residential drinking water systems met Ontario's rigorous, health-based standards.
- Once again, our inspection program indicates that regulated drinking water systems are achieving performance improvements — for 2010-11, 65 per cent of municipal residential drinking water systems achieved a 100 per cent inspection rating. This is a six per cent increase since the last reporting year.
- All municipal residential drinking water systems have received their final licences and accreditation as part of our licensing program. This significant milestone is a testament to the dedication of the system owners and operators in Ontario. The program, which incorporates a quality management system for drinking water systems, is the first of its kind in North America, and drives our systems to continuously improve their performance.
- Source protection planning is progressing very well. Community-based source protection committees are developing plans to address risks to the quality and quantity of their water sources. We look forward to receiving these plans in August 2012.
- As of December 31, 2011, public health inspectors completed 94.1 per cent of the risk assessments for small drinking water systems in Ontario, as reported by the Ministry of Health and Long-Term Care.

PUBLIC CONFIDENCE RESULTS

Today, more and more Ontarians are turning to their taps as their primary source of drinking water. According to the 2011 Canadian Water Attitudes Study which was released in March 2011 by the Royal Bank of Canada and Unilever Canada, 91 per cent of Ontarians are confident that their drinking water is safe and of high quality. This represents a 10 per cent jump from the previous year's survey results.

Ontario's leadership in drinking water protection continues to be acclaimed. We received an 'A' rating — the highest in Canada — in Ecojustice's Waterproof 3 Report in November 2011.

It is encouraging to see that our safety net is working, and that Ontarians trust the quality of our drinking water.

I am very confident in the safety of Ontario's drinking water — I drink it straight from the tap. Ontario's drinking water — yours to drink.

— Dr. Romila Verma, Instructor, University of Toronto and Research Affiliate, Environmental Sustainability Research Centre, Brock University.



PROTECTING YOUR DRINKING WATER SOURCES

Protecting Ontario's drinking water sources — our lakes, rivers and groundwater — is the vital first step to protect our drinking water supplies.

LEADERSHIP IN SOURCE PROTECTION PLANNING

Together with our partners, we are making real progress in further protecting our drinking water sources. As required by the Clean Water Act, 19 source protection committees are in place across Ontario and all have submitted their science-based assessment reports to the ministry. These reports identify existing and future activities that could pose risks to both the quality and quantity of our drinking water supplies. They also consider the effects of climate change on our drinking water sources, so that adaptation measures can be included in the source protection planning process. You can access local assessment reports via Conservation Ontario's website.

Source protection committees are now making good progress towards developing source protection plans based on their assessment reports. The plans are due to the ministry by August 2012 and following approval, they will be implemented and monitored to help ensure our drinking water sources are protected for years to come.

Under the Clean Water Act, First Nations with reserves in source protection areas may also request to have their drinking water systems included in the source protection planning process. As of the end of December 2011, three First Nations communities have passed a Band Council





Resolution to have their drinking water sources protected under this process: Kettle and Stony Point First Nation, Six Nations of the Grand River and the Rama First Nation.

The dedication and combined efforts of everyone involved in this process are commendable — including municipalities, conservation authorities, the agricultural sector, industry and First Nations. The ministry looks forward to continuing this collaborative work with our partners as we collectively forge ahead with the next phase of the source protection planning process.

For more information about drinking water source protection, please visit www.ontario.ca/cleanwater.

SUPPORTING PRIVATE WELL OWNERS

Approximately 1.8 million Ontarians rely on private wells for their drinking water and the ministry continues to support these communities on a number of fronts. We have environmental laws in place that define a well owner's responsibility to properly maintain their wells. You can find useful information for well owners on Drinking Water Ontario under Resources for Wells, including the *Water Supply Well — Requirements and Best Management Practices Manual.*

DELIVERING HIGH QUALITY TAP WATER

You can have confidence in the quality and safety of the drinking water supplied by the systems we regulate. Ontario's drinking water systems consistently provide high quality drinking water to our taps. We know this because of the hundreds of thousands of drinking water test results the ministry receives every year from laboratories eligible to perform drinking water tests.

Over 80 per cent of Ontarians receive their drinking water from municipal residential drinking water systems. Year-round residential facilities, such as mobile home parks and residential developments that are not connected to a municipal system, get their water from independent systems referred to as non-municipal year-round residential systems. Systems serving designated facilities include some health care centres, children's camps, schools and day nurseries located in remote or rural Ontario communities that have their own private drinking water systems. They are also regulated by the Ontario government.

Regulated systems must comply with Ontario's laws and regulations which require that the drinking water they supply meets strict health-based standards.

I am happy to report that during 2010-11, 99.87 per cent of tests from municipal residential drinking water systems met Ontario's rigorous standards.

Non-municipal year-round residential systems also continued to perform very well during 2010-11; 99.38 per cent of all tests they submitted met our drinking water standards.

Similarly, systems serving designated facilities had 99.43 per cent of their tests meeting provincial standards.

These results are very good news for Ontarians. We will continue to make every effort to help ensure the high quality of water in our regulated drinking water systems. For information about the municipal residential drinking water system that supplies water to your taps and water quality results, please visit the map of Ontario on Drinking Water Ontario. You can also read the Ontario Drinking Water Performance Results section in this report for details on regulated drinking water systems.

DRINKING WATER FACTS



VIGILANCE THROUGH ONGOING MONITORING



Drinking water is monitored regularly and test results tell us if the level of a contaminant exceeds the provincial standard. Also, if a drinking water system has an equipment failure or if other issues arise that may pose a threat to the safety of drinking water, immediate corrective action is required. These situations are considered adverse water quality incidents.

It is important to understand that not all adverse water quality incidents result in unsafe drinking water. They do, however, indicate that an incident has occurred and that the safety of the drinking water supply needs to be checked. When this happens, the incident is reported to the ministry and the local Medical Officer of Health. If needed, a Boil Water or Drinking Water Advisory may also be issued.

For more information on drinking water test results and adverse water quality incidents, please read the Ontario Drinking Water Performance Results section in this report.

WATER INNOVATION LEADERS

COLLINGWOOD TAP WATER
— *ON THE GO WITH BLUE W*

Collingwood, located on Georgian Bay, is helping its residents find a solution to the dilemma of doing *good for the environment* and doing what is *convenient* when it comes to making water choices — by partnering with Blue W.

Blue W is a non-profit organization that uses online and smart phone apps to map businesses and public facilities where people can refill their own water bottles without having to make a purchase.

"We wanted to improve public access to Collingwood's tap water and educate the public about the water they drink," says Ed Houghton, President and CEO of the Collingwood Public Utilities. "Blue W is the type of program that Collingwood water customers can get behind and shows the utility's commitment to the community."

With the help of industry sponsorship, all 2,100 public elementary school students in Collingwood were given a stainless steel water bottle embossed with their school logo.

Reaching out to youth had an immediate impact. "The day we handed out the water bottles at schools, one of our employees attended his daughter's soccer game," recalls Marcus Firman, Manager of Water Services at the Collingwood Public Utilities. "He was amazed to see the bench lined with our water bottles. Every single girl on the team had brought her new water bottle to the game."



From left to right: Glen McAllister, Conservation Analyst, and Ed Houghton, President & CEO with Collingwood Utility Services, John Stager, Ontario's Chief Drinking Water Inspector, Sandra Cooper, Mayor, Town of Collingwood, Dean Muncaster, Chair, Collingwood Utility Services Board, Marcus Firman, Manager, and Karla Findlay, Administrative Assistant with Collingwood Utility Services, celebrate the launch of Blue W.

Over 45 businesses in Collingwood have signed up to participate in the Blue W program — a great success for this community.

Are you interested in registering your business with Blue W? Find out how at www.bluew.org.

Blue W complements what we do to promote our city's great tap water. Building community partnerships is the key

— Wayne Galliher, Water Conservation Project Manager, City of Guelph.

Guelph was one of the first Blue W communities in Ontario and has 75 participating locations. Learn more about Guelph tap water at guelph.ca.

INSPECTING ONTARIO'S DRINKING WATER SYSTEMS

Inspecting our regulated drinking water systems is another critical component of our drinking water safety net. Inspections tell us how well the systems are operating and meeting Ontario's strict regulations. The ministry and the owners and operators of municipal residential drinking water systems are equally committed to excellence and continuous improvement.

As the level of compliance has been increasing, we developed two types of inspection formats — detailed and focused — which consist of a series of regulatory questions. The focused inspections can be adjusted to a detailed format if any health-related non-compliance issues are determined.

In 2010-11, 65 per cent of municipal residential drinking water systems achieved an inspection rating of 100 per cent. These results are a testament to our commitment to continuous improvement, as we strive toward our goal of achieving 100 per cent inspection ratings for all Ontario municipal residential drinking water systems.

We also conduct proactive, risk-based inspections of non-municipal year-round residential systems and systems serving designated facilities to ensure they meet regulatory requirements and identify any areas they need help with.

In addition, we inspect local services boards which supply water services in areas without municipal governance structures.

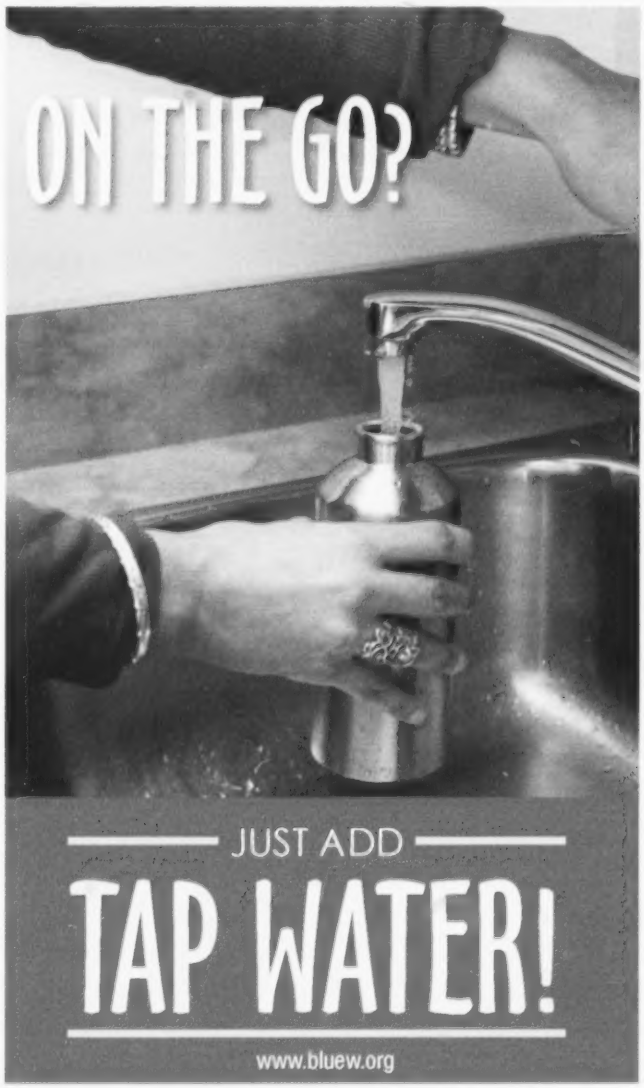
To minimize potential lead exposure from pipes and plumbing, schools and day nurseries — whether they are connected to municipal drinking water systems or not — are also subject to ministry inspections.

You can find more information on 2010-11 inspection results in the Ontario Drinking Water Performance Results section of my report. For information about inspection results for your municipal residential drinking water system, please visit the map of Ontario on Drinking Water Ontario.

MUNICIPAL LICENSING PROGRAM UPDATE

A key part of our drinking water safety net is our commitment to continual improvement, and our licensing program for municipal residential drinking water systems exemplifies just that. Ontario is the North American leader in implementing quality management in the management and operation of drinking water systems.

Under the program, owners of these systems must be licensed by the Ministry of the Environment. To be licensed, these systems must meet Ontario's comprehensive Drinking Water Quality Management Standard. They must also prepare a financial



plan for their drinking water system. Owners are encouraged to follow the best practices available and to build continual improvement into their day-to-day operations.

I am very proud to say that as of September 2011, all 303 Ontario municipal drinking water system owners have received their final licences.

This is a significant achievement and we could not have advanced this program without the strong leadership and dedication of the owners and operators of Ontario's municipal residential drinking water systems.



WATER INNOVATION LEADERS

WEST ELGIN WATER TREATMENT PLANT ON CUTTING EDGE OF NEW TECHNOLOGY

The West Elgin Water Treatment Plant was transformed from an outdated facility with challenges — including high turbidity and inadequate capacity — to a modern technological marvel.

Opened in 2009, the $16 million state-of-the-art facility boasts the latest in safe drinking water technology, including ultra-violet technology to disinfect water and natural water retention ponds that replaced a traditional backwash water treatment system.

The plant won an Ontario Clean Water Agency OCWAmarine Award for an innovative process developed by plant staff, who devised an efficient way to reduce chemical use for cleaning filtration membranes.

Another interesting feature is the backwash recycling system that filters particles using membranes instead of chemicals. "This plant now uses up to 15 per cent less backwash water than older plants," explains Senior Operations Manager Dale LeBritton.

The wash water from the backwash recycling system goes to an engineered wetland that provides additional water treatment. The plant is the first water treatment plant in Ontario to use a constructed wetland in the treatment process.

"The new plant is a welcome addition to the local community," Mr. LeBritton adds. "The community has taken an active role in managing the land around the ponds. Local groups have planted trees and developed walking trails — it's become a nice little conservation area."

The multifaceted approach to water treatment in West Elgin is an example of a mix of cutting edge technologies and wetland restoration that is efficient and engages the community.

TRAINING DRINKING WATER SYSTEMS PROFESSIONALS

Did you know that Ontario's drinking water operators are among the best trained in the world? To become certified, they go through rigorous training, an examination process and must also meet continuing education requirements each year. The first step in becoming an operator is to complete operator-in-training certification.

As there are different types and sizes of drinking water systems, an operator is required to be trained and certified according to the facility he or she operates. For example, the more complex a system is, the more training an operator must complete. In 2010-11, a total of 1,378 drinking water operator-in-training certificates were issued to 814 new drinking water operators. If you are interested in operator training, please visit Drinking Water Ontario.

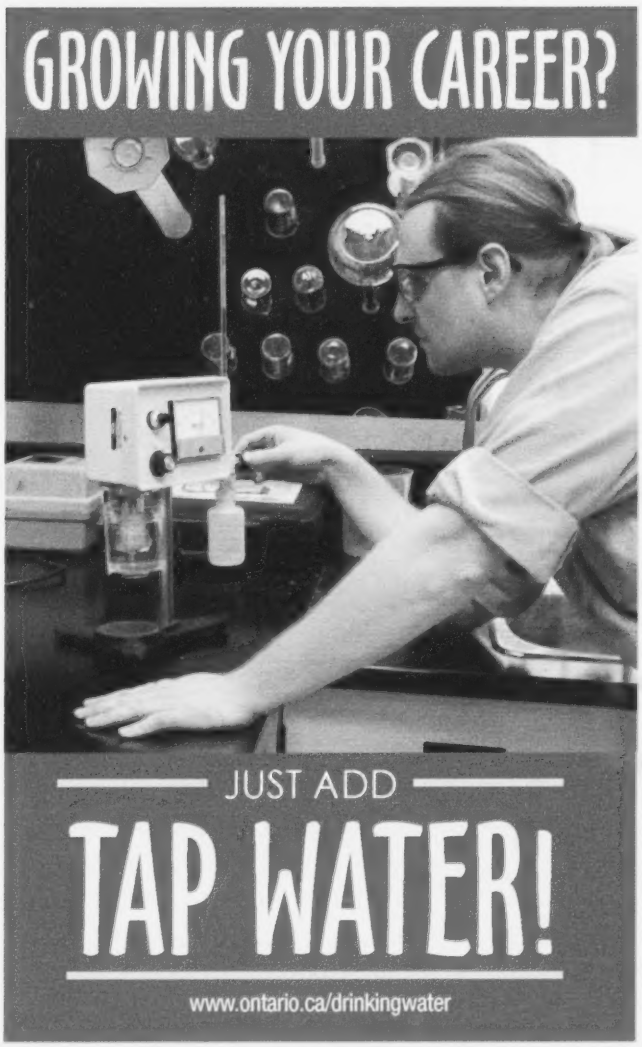
Our training partners

The Walkerton Clean Water Centre (the Centre), an agency of the government of Ontario, plays an essential role in training our operators. It is a state-of-the-art Technology Demonstration Facility that provides a unique opportunity for classroom and hands-on training and serves as a practical resource for operators and other water professionals.

The Centre offers high quality training with a special focus on meeting the needs of small and remote systems, including First Nations systems. Training is offered in Walkerton and across the province. Using mobile training units, through agreements with Confederation College in Thunder Bay and Northern College in Kirkland Lake, on-site training is offered across Northern Ontario.

As of the end of December 2011, the Centre has trained more than 32,000 water professionals and municipal leaders since it opened in 2005. Today, it is where experts from around the world come to learn how to protect drinking water. In 2011, delegates from Japan, China, Taiwan and Kenya visited the Centre.

An additional priority of the Centre is to contribute to Ontario's vision as the North American leader in developing and selling innovative new technologies and services for water conservation and treatment.



Opportunities for youth

As of March 31, 2011, there were 6,389 certified drinking water operators in the province holding 8,847 certificates. It is encouraging to see that more college students are pursuing operator certification, especially since we know that many current operators are eligible to retire in the next few years.

The ministry has agreements with 15 community colleges across Ontario that now offer the entry-level drinking water operator training course as part of their environmental/engineering programs. Ten of these colleges participated in the Centre's hands-on training program in 2011.

The one-week entry-level course is mandatory for all new drinking water operators and when completed, graduates have additional career options and greater job opportunities. As of the end of December 2011, 1,307 students have taken the entry-level course through their college programs and approximately 21 per cent of these graduates hold a valid drinking water operator certificate.

To learn more about the entry-level course, please visit the Walkerton Clean Water Centre's Operator Licensing Frequently Asked Questions page on their website.

Opportunities for municipal officials

Municipal councillors and other municipal officials share in the responsibility for safeguarding water, and have legal responsibilities under the Safe Drinking Water Act. In 2011, a new guide for municipal councillors was released by the Ministry of the Environment to help them better understand these responsibilities. In addition, the Walkerton Clean Water Centre introduced a new training course for municipal officials on their statutory standard of care duties that expanded on the guide. From March to December 2011, the Centre provided this new course to 468 participants, and is holding additional sessions of this popular course throughout 2012.

PERFORMING DRINKING WATER TESTING

Safeguarding Ontario's drinking water involves regular testing and inspections of the laboratories that are doing the testing. In 2010-11, there were 52 licensed laboratories in the province. All these laboratories must be inspected, accredited and licensed by the ministry before they can start testing samples from our regulated drinking water systems. We are the only jurisdiction with these stringent requirements. Out-of-province laboratories that analyze Ontario's drinking water must be on the Director's Out-of-Province Eligibility List and are also inspected. In 2010-11 there was one eligible laboratory on the list.

To help laboratories understand their legislative requirements and comply with regulations, we issue Laboratory Update Bulletins which are posted on Drinking Water Ontario.

I am very happy to report that the laboratories continue to perform well, year after year. In 2010-11, all of our licensed laboratories were inspected a minimum of two times, and at least one of the two inspections was unannounced. For details on our inspection results, go to the Ontario Drinking Water Performance Results section on Laboratory Licensing and Compliance Program Results.

With our partners, we are committed to providing Ontarians with safe, clean drinking water now and in the future. You can be confident that Ontario's drinking water is of high quality and it is among the best protected in the world.

I encourage you to continue reading my report to learn more about drinking water test results, inspection ratings for drinking water systems, small drinking water system risk assessments and inspection results for laboratories eligible to perform drinking water testing.

WATER INNOVATION LEADERS

NEW PARTNERSHIPS WITH FIRST NATIONS COMMUNITIES

— IMPROVING OUR DRINKING WATER SAFETY NET

Bimose Tribal Council's Partnership with the Walkerton Clean Water Centre

A training agreement was established in August 2011 between the Walkerton Clean Water Centre and the Bimose Tribal Council to support drinking water training for First Nations youth.

During this two-year partnership, the Walkerton Clean Water Centre supports training for nine First Nation member communities that are located in northwestern Ontario near Kenora. First Nation participants are being trained to operate on-reserve drinking water and wastewater facilities. The train-the-trainer element of this agreement has been particularly successful. Bimose Tribal Council's own trainers trained over 125 operators in 2011.

"We are hopeful that this is the first of many partnerships that will build drinking water capacity within our First Nations communities and build confidence in our drinking water," say Bimose Council Technical Advisors, Phil Tangie and Paul Otis.

The Centre is providing materials and associated water testing equipment for training purposes. Bimose Tribal Council has access to a mobile training unit — a self-contained drinking water training and technology demonstration unit that offers critical hands-on experience.

"The Centre is excited to work with Bimose Tribal Council, sharing knowledge and training and ultimately motivating future drinking water professionals," says Venkat Ramani, Senior Operational Instructor at the Centre.

Canada-Ontario First Nations Drinking Water Improvement Initiative

In July 2011, Canada and Ontario announced a new initiative between Aboriginal Affairs and Northern Development Canada, Ontario and the Ontario First Nations Technical Services Corporation. This three-year joint undertaking will support projects in Ontario First Nation communities.

Many First Nation communities in the province face challenges in providing safe drinking water and are looking for solutions. This initiative will support collaborative demonstration projects in Ontario First Nations to help address these challenges. The projects will showcase innovative and cost-effective approaches to protect drinking water and improve long-term drinking water quality. Ideally, these solutions will be easily replicated in other communities of similar size.

The federal government is providing $5 million in funding towards the projects. Technical support and training will be provided by the province, as well as the Ontario First Nations Technical Services Corporation. Technical support for the projects during the training and evaluation phases will be offered by the Walkerton Clean Water Centre.

We are very pleased with the partnership and I would like to thank Shooniyaa Wa-Biitong, the Province of Ontario, the Walkerton Clean Water Centre and all the trainees for making this a reality. One result we are proud of is that the Ochiichagwe'Babigo'Ining Ojibway Nation won the award for the best tasting water at the Northwestern Ontario Water and Wastewater Conference Symposium last August 2011 with two other Bimose Communities placing third and fifth out of 19 entrants.
— Charlene Mandamin, Chair, Bimose Tribal Council.


ONTARIO
DRINKING WATER
PERFORMANCE
RESULTS

ONTARIO DRINKING WATER PERFORMANCE RESULTS

Excellent drinking water performance results have been achieved again in Ontario in 2010-11. In this section of my report you can find detailed information on how well Ontario's drinking water systems and laboratories that conduct drinking water tests have performed. We measure performance by evaluating the quality of the drinking water that is produced by different types of systems, and how well the systems and laboratories have met our strict requirements.

The following data, covering the period from April 1, 2010 to March 31, 2011, illustrates in more detail the results from municipal residential drinking water systems, non-municipal year-round residential systems and systems serving designated facilities.

DRINKING WATER FACTS

SETTING ONTARIO DRINKING WATER QUALITY STANDARDS



Ontario uses 158 health-based quality standards for microbiological, chemical and radiological parameters to help ensure the highest quality of drinking water. The standards are found in the Ontario Drinking Water Quality Standards Regulation (O. Reg. 169/03) which is made under the Safe Drinking Water Act.

- **Microbiological:** Microbiological organisms include total coliforms and *Escherichia coli* (*E. coli*) bacteria. Their presence indicates microbiological contamination and the potential for serious health problems. For this reason, the drinking water standards for microbiological parameters require that total coliforms and *E. coli* should not be detectable in drinking water. Mandatory reporting and corrective actions are undertaken if they are found.
- **Chemical:** Ontario's drinking water quality standards establish maximum acceptable concentrations for chemical parameters, such as lead and mercury, that can be present in drinking water. The testing frequency for these parameters depends on the type of chemical, the category of drinking water system, the size of the population the system serves and the type of water source.

Radiological: Some radionuclides are naturally present in the environment. In accordance with their drinking water licence requirements, municipal residential drinking water systems, whose source waters contain naturally occurring radionuclides, are required to sample and test for these radionuclide parameters.

The province has also adopted operational parameters for various other aspects of water quality, such as colour, odour, taste and turbidity.

2010-11 DRINKING WATER QUALITY TEST RESULTS

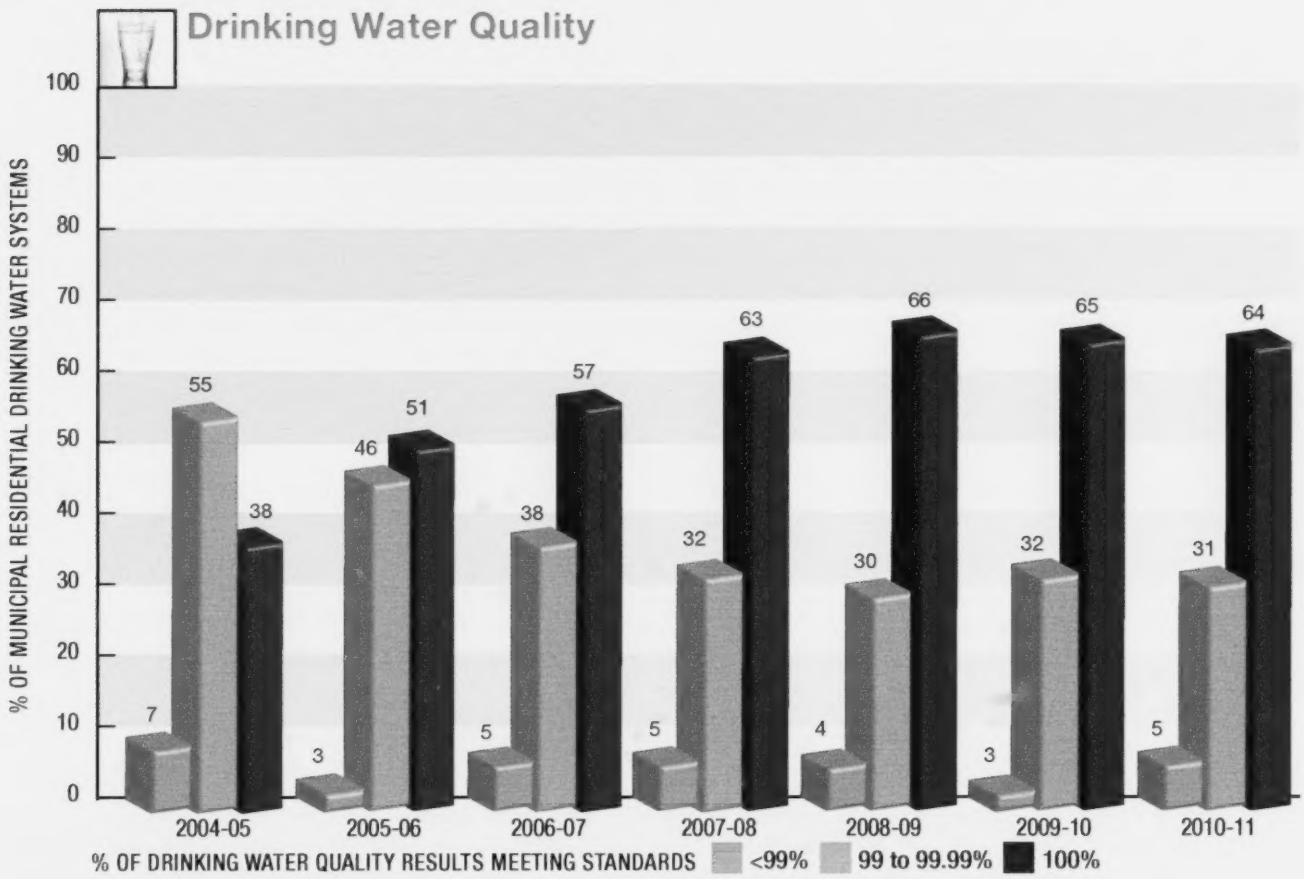
Owners and operators of drinking water systems must submit samples to laboratories eligible to perform drinking water tests to determine whether they meet provincial drinking water quality standards. If the level of a contaminant exceeds a provincial standard, it must be reported immediately and corrective action must be taken.

Six hundred and eighty-one municipal residential drinking water systems submitted thousands of samples throughout the year. Here is a breakdown of some of our findings:

- 95 per cent or 649 municipal residential drinking water systems had 99 per cent or more of their tests meeting our standards. Four hundred and thirty-seven or 64 per cent of this group of systems had 100 per cent of their drinking water quality tests meeting standards.

Chart 1 highlights the trends in the percentages of municipal residential drinking water systems meeting drinking water standards over the past seven years.

Chart 1: Percentage Distribution of Municipal Residential Drinking Water Systems' Drinking Water Quality Tests Meeting Ontario's Drinking Water Quality Standards by System Over Seven Years



OVERALL TEST RESULTS

In 2010-11, over 639,000 drinking water test results were sent to the ministry by laboratories eligible to perform drinking water tests on samples from municipal residential drinking water systems, non-municipal year-round residential systems and systems serving designated facilities. The results show that Ontario's drinking water systems continue to provide high quality drinking water to our taps.

- Of the 519,861 samples that were submitted by municipal residential drinking water systems 99.87 per cent of them met Ontario's rigorous, health-based drinking water standards. The results also show that 99.90 per cent of these tests met microbiological standards and 99.67 per cent met chemical standards. No exceedances for radiological parameters were found.
- Non-municipal year-round residential systems submitted 43,665 drinking water samples and 99.38 per cent of tests met the standards. Of these, 99.32 per cent met microbiological standards and 99.56 per cent met chemical standards.
- Systems serving designated facilities submitted 75,897 drinking water samples and 99.43 per cent of tests met the standards. Results also indicated that, 99.50 per cent of tests met microbiological standards and 99.31 per cent met chemical standards.

Table 1 provides a summary of the test results for each facility type by parameter (microbiological, chemical and radiological) and the percentage meeting standards. Lead results from distribution systems are included in the chemical parameters.

Table 1: Summary of Drinking Water Test Results for All Facility Types from April 1, 2010 to March 31, 2011

Facility Type	Parameter	# of Systems with Exceedances[1]	# of Test Results	# of Exceedances	% Exceedance	2010-11 % Meeting Standards
Municipal Residential Drinking Water Systems	*E. coli*	24	230,033	26	0.01	99.99
	Total Coliform	198	230,045	455	0.20	99.80
	Total Microbiological[2]	198	460,078	481	0.10	99.90
	Chemical[3]	72	59,777	196	0.33	99.67
	Radiological	0	6	0	0.00	100.00
	TOTAL	**244**	**519,861**	**677**	**0.13**	**99.87**
Non-Municipal Year-Round Residential Systems	*E. coli*	10	15,826	18	0.11	99.89
	Total Coliform	86	15,827	198	1.25	98.75
	Total Microbiological[2]	86	31,653	216	0.68	99.32
	Chemical[3]	23	12,012	53	0.44	99.56
	Radiological	0	0	0	Not applicable	Not applicable
	TOTAL	**103**	**43,665**	**269**	**0.62**	**99.38**
Systems Serving Designated Facilities	*E. coli*	16	24,618	19	0.08	99.92
	Total Coliform	145	24,628	225	0.91	99.09
	Total Microbiological[2]	145	49,246	244	0.50	99.50
	Chemical	38	26,651	185	0.69	99.31
	Radiological	0	0	0	Not applicable	Not applicable
	TOTAL	**178**	**75,897**	**429**	**0.57**	**99.43**

1 A single system could have exceedances for multiple parameters. For totals, a system with exceedances across multiple parameters is counted only once.
2 Total Microbiological includes *E. coli* and total coliform results.
3 Lead plumbing results were not included in chemical analysis for 2010-11. Lead distribution results were included.

A microbiological exceedance is sometimes caused by improper sampling methods or sampling locations. Flushing the system and re-sampling to ensure disinfection levels are sufficient are usually enough to resolve these issues.

During all adverse incidents, ministry staff continue to work and communicate with affected system owners and local public health units to ensure corrective actions are taken. If the issue is ongoing, ministry staff in collaboration with local public health units and the system owners will continue to monitor the incident to ensure it is resolved. All corrective actions have to be identified in a final report and submitted to the ministry once the issue has been resolved.

Table 2 summarizes the overall test results for these three drinking water facility types. There is a consistent trend of excellent test results over the past seven years. You can be confident in the quality and safety of the drinking water provided by the systems we regulate.

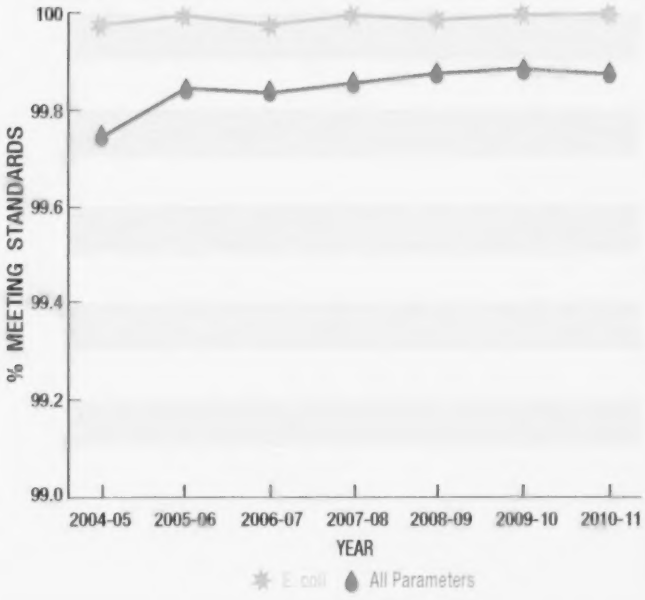
Table 2: Drinking Water Test Results for Drinking Water Systems

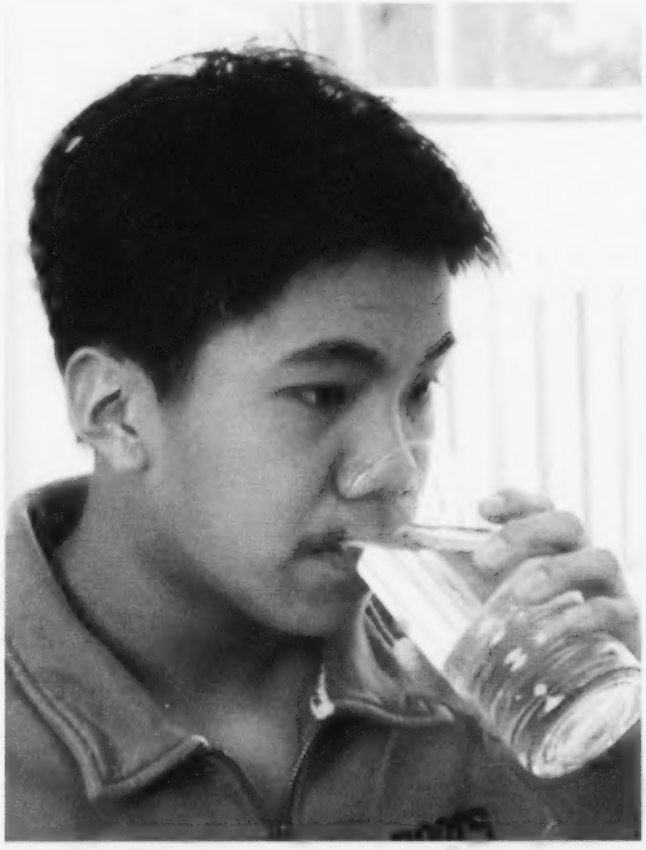
Facility Type	Percentage of Drinking Water Tests Meeting Standards						
	2010-11[1]	2009-10[1]	2008-09[2]	2007-08[2]	2006-07[2]	2005-06[2]	2004-05[2]
Municipal Residential Drinking Water Systems	99.87	99.88	99.87	99.85	99.83	99.84	99.74
Non-Municipal Year-Round Residential Systems	99.38	99.51	99.40	99.40	99.40	99.45	99.41
Systems Serving Designated Facilities	99.43	99.49	99.38	99.39	99.49	99.42	99.06

1 Lead distribution results were included and lead plumbing results were reported separately.
2 Lead results were not included as they were reported separately.
3 There were slight variations in the methods used to tabulate the percentages year over year due to regulatory changes and use of different counting methods.

Chart 2 gives you a percentage breakdown of the drinking water tests from municipal residential drinking water systems that met provincial standards over the past seven years.

Chart 2: Municipal Residential Drinking Water Systems' Drinking Water Quality Tests Meeting Ontario's Drinking Water Quality Standards for All Parameters and *E. coli* Over Seven Years





Some adverse incidents are caused when chemicals occur naturally in the source water. In such cases, the ministry stresses vigilance and monitors the incident.

Table 3 shows the number of exceedances and systems with exceedances for various chemical parameters. Test results are from samples taken from all three facility types during 2010-11.

Table 3: Number of Chemical Standard Exceedances by Facility Type for 2010-11

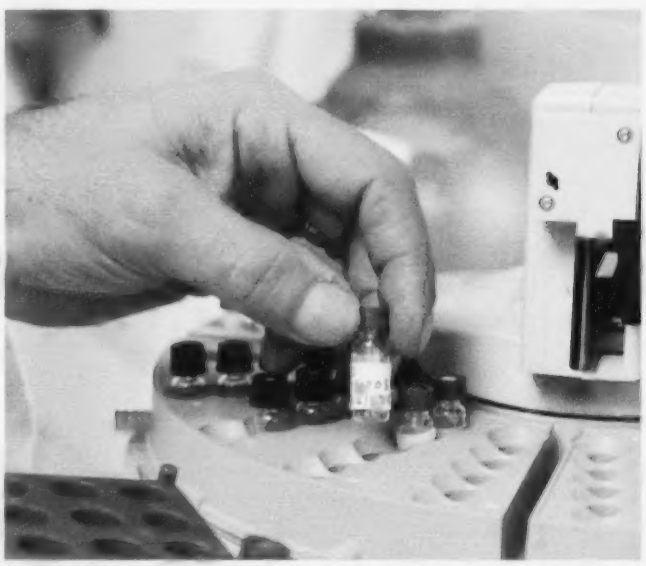
Parameter	Municipal Residential Drinking Water Systems		Non-Municipal Year-Round Residential Systems		Systems Serving Designated Facilities	
	# of exceedances	# of systems with exceedances[1]	# of exceedances	# of systems with exceedances[1]	# of exceedances	# of systems with exceedances[1]
Antimony	0	0	0	0	1	1
Arsenic[2]	0	0	1	1	3	2
Barium[2]	4	1	0	0	0	0
Benzo[a]pyrene	0	0	0	0	2	1
Bromate	1	1	0	0	0	0
Cadmium	0	0	0	0	2	2
Fluoride[2]	81	21	7	4	31	11
Glyphosate	0	0	1	1	0	0
Lead[3]	35	22	5	4	6	5
Nitrate (as Nitrogen)	0	0	11	5	60	18
Nitrite (as Nitrogen)	0	0	0	0	19	3
Nitrate + Nitrite (as Nitrogen)	0	0	11	5	60	18
Selenium[2]	7	1	0	0	1	1
Trihalomethanes[4]	68	28	9	4	0	0
Uranium[2]	0	0	8	4	0	0
Chemical Total	**196**	**72**	**53**	**23**	**185**	**38**

1 A single system could have exceedances for multiple parameters. For totals, a system with exceedances across multiple parameters is counted only once.
2 In some parts of the province, there are naturally occurring deposits of arsenic, barium, fluoride, selenium and uranium.
3 Chemical totals did not include lead sampled in plumbing for municipal residential and non-municipal year-round residential systems. Lead sampled in the distribution system was included.
4 Trihalomethanes are expressed as the running average of quarterly samples over one year.

Lead Testing Results for 2010-11

Some pipes in a plumbing system may contain lead. If corrosion occurs in these pipes, lead can enter the drinking water system. To minimize potential lead exposure from pipes and plumbing, schools and day nurseries in Ontario must have their drinking water tested for lead at specified intervals, and flush the water in the plumbing before opening for the day. O. Reg. 243/07 requires that two types of samples are collected for testing:

- **Standing** — after the plumbing has not been used for at least six hours.
- **Flushed** — after the water has been running or flushing for five minutes, followed by a 30 to 35 minute waiting period.



Sample Results: 87.58 per cent of standing samples and 94.56 per cent of flushed samples met the Ontario drinking water standard for lead.

The data shows that flushing is effective at reducing lead in drinking water. This is made clear in **Table 4** which summarizes the 2010-11 lead testing results for schools and day nurseries.

The results for lead testing in plumbing of municipal residential drinking water systems and non-municipal year-round residential drinking water systems are summarized in **Table 5**.

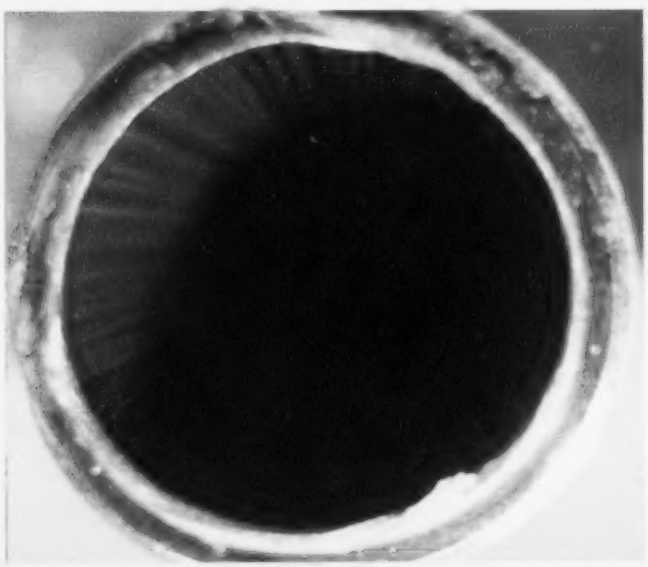
Table 4: Summary of Lead Results for Schools and Day Nurseries under O. Reg. 243/07 for 2010-11

Parameter	# of Schools and Day Nurseries Submitting Results	# of Schools and Day Nurseries with Exceedances	# of Results	# of Exceedances	% Exceedance	% Samples Meeting Standards
Lead - Standing	7,301	740	8,529	1,059	12.42	**87.58**
Lead - Flushed	7,313	214	9,013	490	5.44	**94.56**

Table 5: Summary of Drinking Water Test Results for Lead in Plumbing for Municipal Residential Drinking Water Systems and Non-Municipal Year-Round Residential Systems from April 1, 2010 to March 31, 2011

Facility Type	Parameter	# of Systems with Exceedances	# of Results	# of Exceedances	% Exceedance	2010-11 % Meeting Standards	2009-10 % Meeting Standards
Municipal Residential Drinking Water Systems	Lead in plumbing[1]	80	16,053	693	4.32	**95.68**	96.42
Non-Municipal Year-Round Residential Systems	Lead in plumbing[1]	16	2,313	32	1.38	**98.62**	98.49

1 Samples taken after flushing of system occurred.



A distribution pipe without corrosion.

Corrosion Control for Municipal Residential Drinking Water Systems

Corrosion control plans may be necessary for municipal residential drinking water systems serving more than 100 private residences. Under O. Reg. 170/03, such a plan must be submitted to the ministry if:

- more than 10 per cent of all plumbing location sampling results had reported lead amounts greater than 10 micrograms/L in two out of three sampling rounds, and
- in those two rounds, at least two samples exceeded the standard for lead of 10 micrograms/L.

Drinking water system owners, whose system sampling results meet the criteria for corrosion control, have one year to submit corrosion control plans to the ministry. These plans must analyse the potential for lead entering the water and provide measures that will be taken to reduce that potential.

Based on lead test results submitted in 2010-11, only one new Ontario community was required to prepare a corrosion control plan. Seven of the 19 communities that were included in my 2009-10 report have submitted their corrosion control plans and seven other communities are making improvements to their treatment plants and distribution systems. The ministry continues to work with five remaining communities on the submission of their plans.

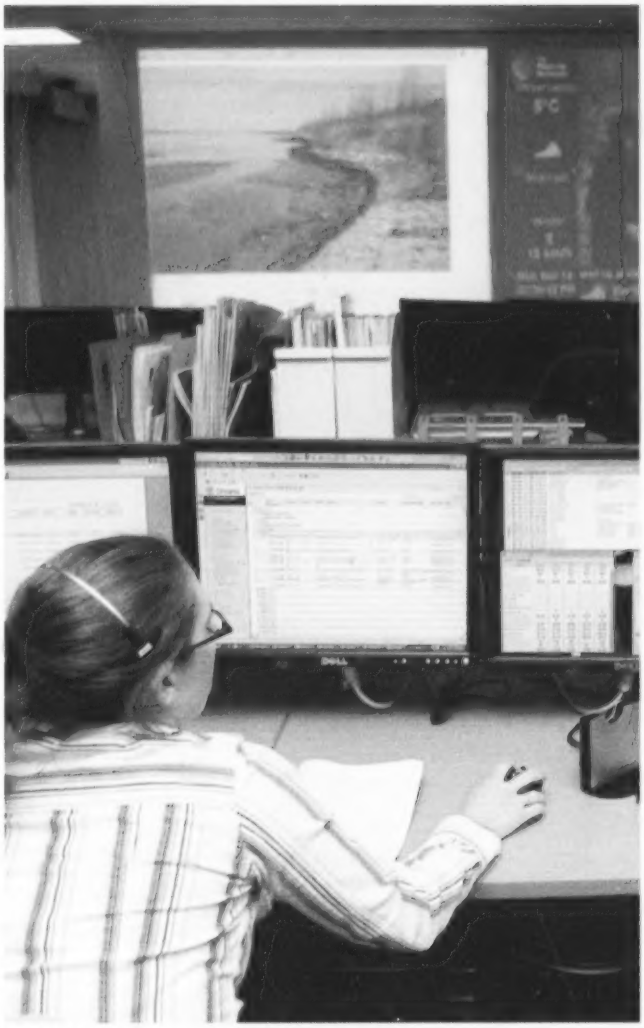
REPORT ON ADVERSE WATER QUALITY INCIDENTS

A critical component of Ontario's drinking water safety net is ensuring prompt corrective action is taken on adverse water quality incidents (AWQIs). This helps ensure there is effective oversight and monitoring if an event occurs. An AWQI indicates that a drinking water standard has been exceeded or a problem has arisen within a drinking water system in one or more of the three categories of microbiological, chemical and other. Under O. Reg. 170/03, AWQIs include:

- Any exceedance of a prescribed Ontario Drinking Water Quality Standard.
- The presence of other specified microbiological organisms that are not listed in the Ontario Drinking Water Quality Standards.
- Exceedances of health-related parameters that are specified in a municipal drinking water licence or order, or operational parameters such as high turbidity.

The report of an adverse event does not necessarily mean that the drinking water is unsafe; it indicates that an incident has occurred and corrective action must be taken.

If a laboratory identifies the adverse result, it must immediately notify the owner and/or operating authority of the system, the Ministry of the Environment's Spills Action Centre and the local Medical Officer of Health. When the owner or operating authority is made aware of an adverse test result they must also immediately notify the Ministry of the Environment's Spills Action Centre and the local Medical Officer of Health and take appropriate action.



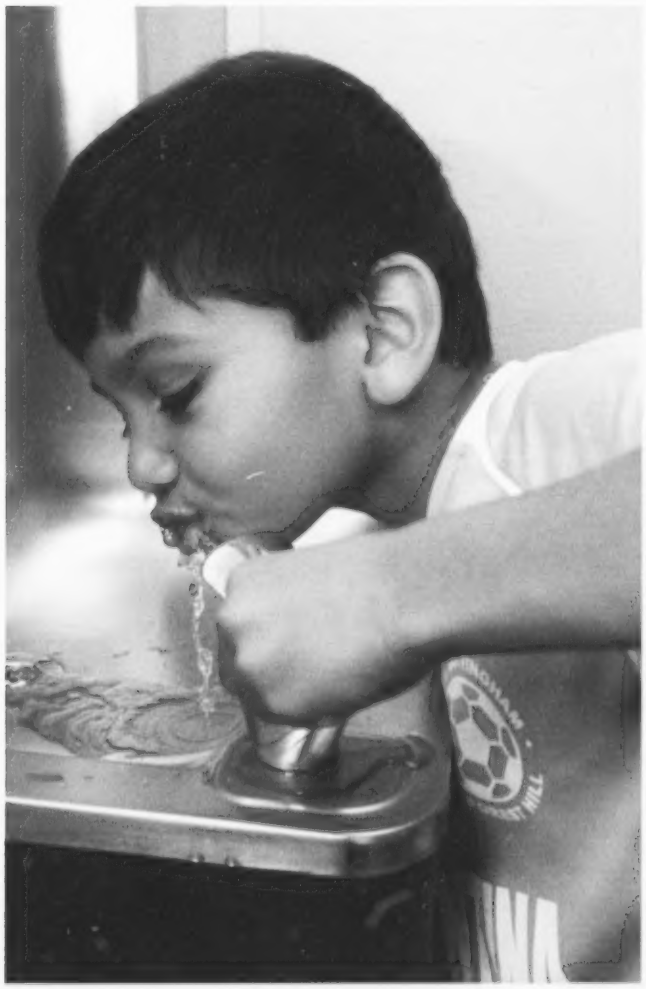
The Ministry of Environment Spills Action Centre.

Corrective actions, which are provided in O. Reg. 170/03 vary depending on the adverse event and may include re-sampling, adjusting the system or treatment processes, or notifying system users. The owner must also take any additional measures as directed by the local Medical Officer of Health, which could include issuing a Boil Water Notice or Advisory or a Drinking Water Notice or Advisory.

The ministry then works with the Medical Officer of Health to confirm that the owner of the system is resolving the situation. The ministry monitors the event to help ensure all appropriate corrective actions are completed to rectify the issue and safeguard the drinking water supply for the system users.

In most situations, system owners are able to quickly address and resolve the issue that led to a report of an AWQI. Some corrective actions may require more time as changes may be needed to a system's treatment, process and/or operations.

When needed, the ministry will initiate a priority field response to conduct a site inspection, and if necessary collect drinking water samples for auditing purposes. The ministry also manages all resolution reports from drinking water system owners to ensure the AWQIs have been appropriately resolved.



Summary of Adverse Water Quality Incidents by Drinking Water Facility Type for 2010-11

A single AWQI may have multiple results, for example, if more than one standard is exceeded. Adverse test results for microbiological exceedances may include *E. coli*, total coliform and other bacteria as stated in O. Reg. 170/03. The "other" category may include high sodium, low or high chlorine, turbidity and equipment failure.

Municipal residential drinking water systems: In 2010-11, 404 municipal residential drinking water systems reported 1,562 AWQIs containing 1,717 results. Of these, 28.8 per cent of test results were microbiological, 15.3 per cent were chemical and 55.8 per cent were for other parameters.

Non-municipal year-round residential systems: A total of 177 non-municipal year-round residential drinking water systems reported 445 AWQIs containing 546 results. Of these, 44.3 per cent were for microbiological exceedances, 16.5 per cent were for chemical exceedances, and 39.2 per cent were for other parameters.

Systems serving designated facilities: 373 drinking water systems serving designated facilities reported 630 AWQIs containing 759 test results. Microbiological exceedances accounted for 36.5 percent, 23.8 per cent were for chemical exceedances and 39.7 per cent were for other parameters.

Schools and Day Nurseries: When the drinking water in the plumbing of schools and day nurseries that are served by the three regulated facility types exceeds the Ontario drinking water standard for lead, these facilities report the exceedance as a Lead Exceedance Notification which is similar to an AWQI. In 2010-11, 806 schools and day nurseries reported 1,144 Lead Exceedance Notifications containing 1,591 results. Of these, 461 were from flushed samples and 1,130 were from standing samples.

No exceedance of radiological parameters were reported during this period.

KNOW THE DIFFERENT TYPES OF WATER ADVISORIES



Boil water advisories and drinking water advisories are issued by the local Medical Officer of Health if there is a concern that drinking water may not be safe for public consumption. Advisories may be issued as a result of a known contaminant, or as a precaution due to potential or suspected contamination.

A boil water advisory instructs users to boil any water that may be used for purposes such as drinking or cooking. This type of advisory would be used when microbial contamination has been detected (e.g., an adverse water quality incident, or as a proactive measure where it is suspected). For example, if bacteria, such as *E. coli*, may have entered the water supply, communities will be advised to boil their water before consuming it.



If chemical contaminants are present in the drinking water supply and cannot be removed by boiling or disinfecting the water, a drinking water advisory will be issued. Consumers are advised to use an alternate water supply until further notice. The local Medical Officer of Health will issue advisories to the public through the media, by door-to-door notification or public posting of notices.

Drinking water advisory notices are tools used to protect consumers when the safety of the drinking water may be in question, or as a precautionary measure during times of system maintenance such as watermain repairs. They are issued using a risk-based approach, and remain in place until corrective actions have been taken and the health unit is satisfied that the water does not pose a health risk. In most situations, system owners are able to quickly fix the issue, and the advisory is lifted within one to two weeks.

In some cases, actions such as the upgrading of the water treatment plant are required to resolve the issue and the advisory may remain in effect for longer periods of time. Any advisory that remains in place for longer than 12 months is considered a long-term boil water or drinking water advisory. A Medical Officer of Health will only lift the advisory if they are satisfied that all corrective actions have been taken and that the situation has been remedied.

As of March 31, 2011, two municipal residential drinking water systems had long-term boil water advisories. Both of these systems were included in my 2009-2010 and 2008-2009 Annual Reports. The ministry has been working with these two drinking water system owners to help ensure that they continue to take appropriate corrective actions.

2010-11 DRINKING WATER SYSTEMS INSPECTION PROGRAM RESULTS

This section provides inspection results from April 1, 2010 to March 31, 2011 for municipal residential drinking water systems, local services boards, non-municipal year-round residential drinking water systems, systems serving designated facilities and schools and day nurseries.

INSPECTION RESULTS FOR MUNICIPAL RESIDENTIAL DRINKING WATER SYSTEMS

The annual inspections of municipal residential drinking water systems help the ministry determine how well the systems are operating when compared to the province's strict regulatory requirements. A risk-based inspection rating process allows the inspection results to be quantified.



The ministry has seen continuous improvement of municipal residential drinking water system performance over the past six years through its inspection program. Chart 3 provides a summary of municipal inspection ratings over six fiscal years. In 2010-11, 682[1] municipal residential drinking water systems were inspected. Overall, the performance ratings are very good. In summary:

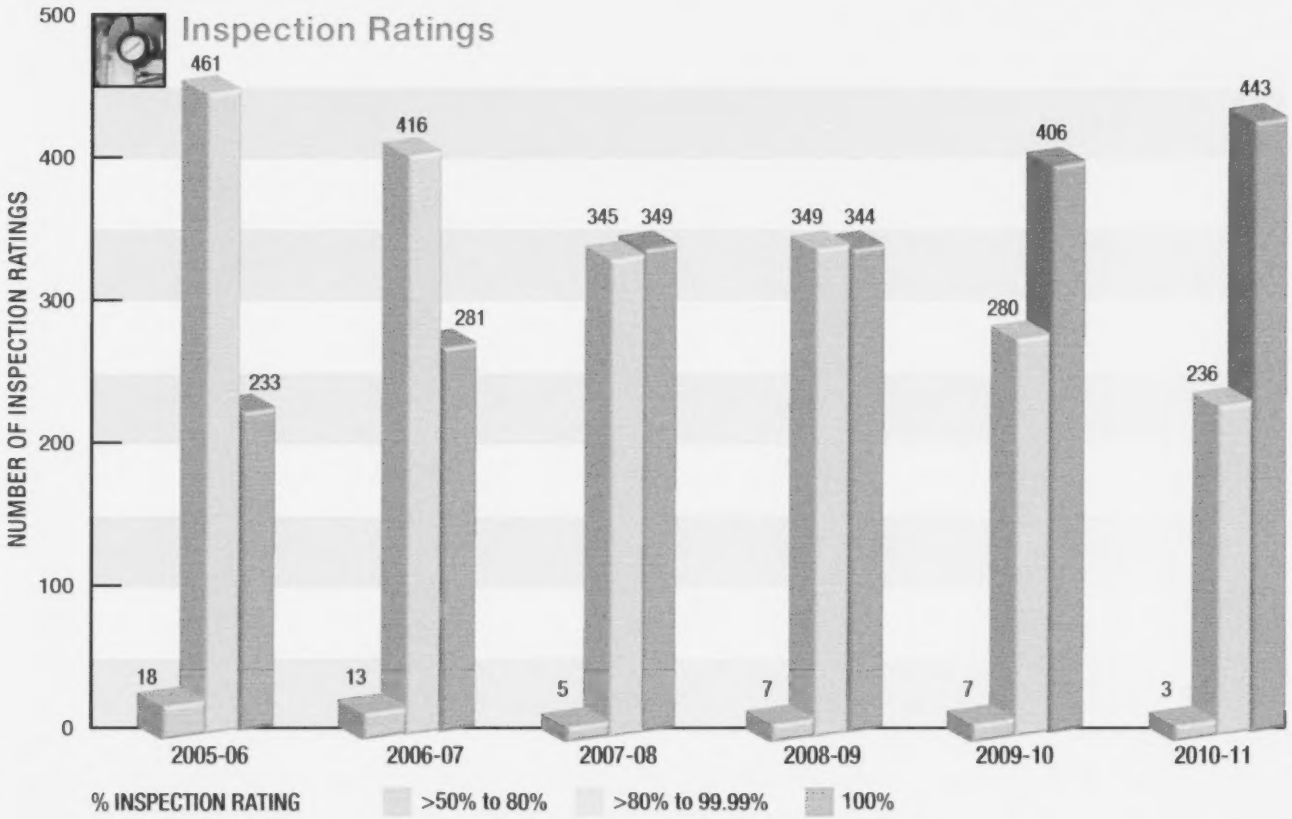
- 443 or 65 per cent of the inspection ratings achieved 100 per cent. This means inspectors found no areas of non-compliance. This is a 32 per cent increase over the last six years — since we began reporting on operational performance.
- 236 or almost 35 per cent of systems achieved inspection ratings between 80 and 99.99 per cent.

When compared to 2009-10 inspection ratings, 33 per cent of ratings improved, 46 per cent remained the same and 21 per cent declined.

It is important to note that an inspection rating that is less than 100 per cent does not mean the system's drinking water is unsafe. It indicates operational areas that need improvement. In these situations, the ministry uses a range of compliance tools when working with the owners and operators to help them achieve excellence.

1 The ministry conducts inspections of systems that ceased operations prior to a new fiscal year, in order to ensure that they were in compliance until they ceased operation. One drinking water system ceased operation prior to fiscal year 2010-11. As a result, it was not required to sample in 2010-11.

Chart 3: Distribution of Municipal Residential Drinking Water System Inspection Ratings in 2005-06, 2006-07, 2007-08, 2008-09, 2009-10 and 2010-11



A table of municipal residential drinking water systems, their inspection ratings and the percentage of their drinking water quality tests meeting the provincial standards can be found on Drinking Water Ontario.

Top Areas for Improvement — Municipal Residential Drinking Water Systems

The inspection program results enable the ministry to identify trends in non-compliance and any issues that require special attention. During 2010-11, the following areas for improvement were identified:

- Treatment equipment operation
- Ensuring that monitoring equipment is recording required data continuously
- Maintaining secondary disinfection
- Following proper procedures with regards to verbal notifications of adverse water quality incidents

The ministry works with the owners and operators to improve their systems' performance and help them better understand their responsibilities. Drinking water training and outreach programs are also adjusted to help address these areas for improvement.



Deficiencies, Orders and Order Resolutions — Municipal Residential Drinking Water Systems

Deficiencies

If a violation of specified provisions of the Safe Drinking Water Act or its regulations, in the opinion of the director, poses a drinking water health hazard, it is considered a deficiency. An example of such a deficiency would be water treatment equipment that is not operating according to provincial standards and is likely to adversely affect the health of the users of the system. If a deficiency at a municipal residential drinking water system is deemed to pose a drinking water health hazard, the ministry is required to take mandatory action within 14 days.

In 2010-11, no drinking water systems were found to have deficiencies during ministry inspections.

Orders and Order Resolution

Ministry inspectors may issue an order to resolve non-compliance issues at a drinking water system. Orders may be classified as either contravention orders or preventative orders.

In 2010-11, 682 inspections led to five orders being issued for violations at five drinking water systems as shown in **Table 6**. In addition, four orders were issued to four systems as a result of incidents or issues that occurred outside of the inspection timeframe. Details of all nine orders can be accessed at Drinking Water Ontario.

Of the nine orders issued, six systems have complied with the order requirements and three of them are working towards achieving order compliance.

One system that received an order in 2009-10 continues to work towards meeting the requirements of that order. Another system, that was issued an order in 2008-09, achieved compliance in 2011-12.

Table 6: Municipal Residential Drinking Water Systems that Received Orders in 2010-11, 2009-10, 2008-09 and 2007-08

Systems with Inspection-Related Orders	2010-11	2009-10	2008-09	2007-08
Total Number of Municipal Residential Drinking Water Systems with Inspection-Related Orders	5[1]	6	18[1]	11
Total Number of Inspections of Municipal Residential Drinking Water Systems	682	693	700	699
Percentage of Municipal Residential Drinking Water Systems with Inspection-Related Orders	0.7%	0.9%	2.6%	1.6%
Systems with Non-Inspection-Related Orders[2]	4	2	4	3
Total Number of Orders Issued to Municipal Residential Drinking Water Systems (Inspection and Non-Inspection)	**9**	**8**	**25**	**14**

1 Three municipal residential drinking water systems were issued preventative orders during an inspection.
2 Non-inspection-related orders were issued as a result of an event or issue at a drinking water system that occurred outside of the inspection timeframe.

INSPECTION RESULTS FOR LOCAL SERVICES BOARDS

Some drinking water systems in northern communities are operated by local services boards and as they are not owned and operated by a municipality, they fall under the category of non-municipal year-round residential drinking water systems.

During 2010-11, the ministry inspected seven drinking water systems operated by local services boards. No orders were issued with respect to these systems.

One local services board owner, who received orders in 2005-06 and 2006-07, continues to work with the ministry to provide safe drinking water for residents. This board received funding under the Building Canada Fund in 2009 and is constructing and installing a treatment system designed to meet disinfection requirements.

ENSURING ACCOUNTABILITY — Meeting the Requirements of the Compliance and Enforcement Regulation



During 2010-11, the Ministry of the Environment fulfilled its responsibilities under the Compliance and Enforcement Regulation (O. Reg. 242/05) of the Safe Drinking Water Act, with respect to inspecting municipal residential drinking water systems and laboratories eligible to perform drinking water testing.

Municipal Residential Drinking Water Systems

Ministry actions included:

- Inspecting all municipal residential drinking water systems in the province and providing appropriate authorities with inspection reports within 45 days of completing the inspection.
- Ensuring that at least one out of every three inspections of a municipal residential drinking water system was unannounced.
- Responding as required to adverse water quality test reports or other reported problems.

Laboratories Eligible to Perform Drinking Water Testing

Ministry actions included:

- Inspecting all eligible laboratories and providing them with inspection reports within 45 days of completing the inspection.
- Ensuring that laboratories are inspected a minimum of two times annually with at least one inspection being unannounced.
- Taking mandatory action within 14 days of finding an infraction at a laboratory (or taking immediate action in cases where a drinking water health hazard was present).

Request for Drinking Water Investigation

The Compliance and Enforcement Regulation enables any member of the public to request an investigation if they have reason to believe that the act, its regulations or instruments are being violated. There were no such requests from the public in 2010-11.

INSPECTION RESULTS FOR NON-MUNICIPAL YEAR-ROUND RESIDENTIAL DRINKING WATER SYSTEMS AND SYSTEMS SERVING DESIGNATED FACILITIES

The ministry conducts proactive, risk-based inspections of non-municipal year-round residential drinking water systems and systems serving designated facilities. When considering which systems to inspect, the ministry looks at the compliance history, adverse water quality incidents and referrals from local public health units.

The ministry works closely with these owners and operators on many fronts to help ensure they understand their responsibilities, and to address any non-compliance issues. We hold province-wide outreach sessions — both locally and through webinars — and produce information kits, instructional videos and plain language guides with practical information and advice that are specific to their needs. We also identify cost-effective ways to help these systems meet their regulatory requirements.

In 2010-11, we inspected 583 of the approximately 2,000 registered systems. One-hundred and forty-nine



of these inspections were at non-municipal year-round residential systems and 434 were of systems serving designated facilities. For 2010-11, 31 orders were issued to 30 systems: 20 orders to non-municipal year-round residential systems and 11 orders to systems serving designated facilities.

INSPECTION RESULTS FOR SCHOOLS AND DAY NURSERIES

As part of its commitment to the safety net, the ministry continues to work with schools and day nurseries to reduce the risk of lead in drinking water for their facilities.

In 2010-11, the ministry inspected 888 of the 11,152 schools and day nurseries regulated under O. Reg. 243/07. Those inspections resulted in one order being issued. Another order was issued as a result of an issue that the facility owner identified and reported to the ministry. The issues raised in the orders have been addressed to the satisfaction of the ministry.

All schools and day nurseries that received orders issued in 2009-10 and 2008-09 have complied with the order requirements.

Table 7 provides a summary of schools and day nurseries that were inspected and received orders in 2010-11.

Table 7: Number of O. Reg. 243/07 Schools and Day Nurseries Receiving Orders in 2010-11, 2009-10 and 2008-09

Schools and Day Nurseries that Received Inspection-Related Orders	2010-11	2009-10	2008-09
Total Number of Schools and Day Nurseries that Received Inspection-Related Orders	1	2	5
Total Number of Inspections of Schools and Day Nurseries	888	1,387	1,009
Percentage of Schools and Day Nurseries that were Inspected and Received Orders	0.1%	0.14%	0.50%
Schools and Day Nurseries with Non-Inspection-Related Orders	1	0	0
Total Number of Orders Issued to Schools and Day Nurseries (Inspection and Non-Inspection)	**2**	**2**	**5**

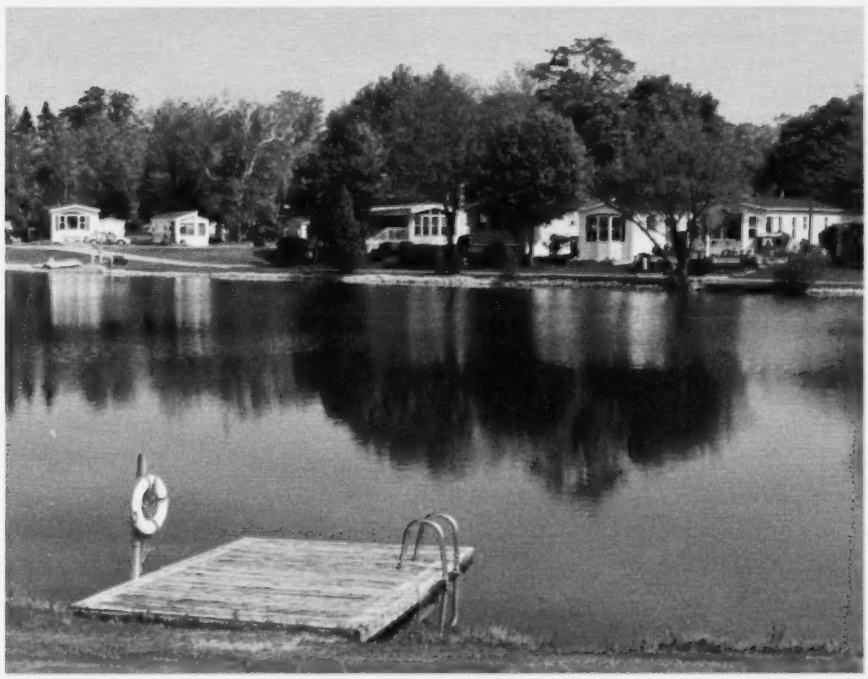
2010-11 SMALL DRINKING WATER SYSTEMS PROGRAM RESULTS

The Ministry of Health and Long-Term Care and local public health inspectors are responsible for regulatory oversight for small drinking water systems under the Health Protection and Promotion Act and its small drinking water system regulations. Under a new risk-based approach, public health inspectors are conducting site-specific risk assessments on small drinking water systems in the province.

Based on the assessment, public health inspectors from local public health units are determining what action owners and operators must take to keep their drinking water clean and safe. The risk assessment process involves visiting the small drinking water system to assess the drinking water source, identify risks that may affect the quality of the water, and develop strategies to monitor and maintain safe drinking water. This reflects an adaptive management approach for each small drinking water system based on the level of risk, rather than a "one-size-fits-all" set of requirements.

Risk assessments are conducted through the use of an electronic risk categorization tool, visual inspections of the water source, system equipment and components, and an evaluation of documentation relating to system water testing and historical sampling results.

The inspector is then able to determine a risk category of high, moderate or low for the small drinking water system and develop specific requirements that must be implemented by the owner and/or operator to safely manage the water supply. The requirements are provided to the owner and/or operator through a legally bind-



ing directive that applies to that small drinking water system. Requirements that may be included in the directive are: the frequency and sampling locations for water sampling by the owner and/or operator, water treatment requirements, operational checks, and owner and/or operator training.

At the end of the site-specific risk assessment, each small drinking water system is placed into one of the following categories:

- High risk
- Moderate risk
- Low risk

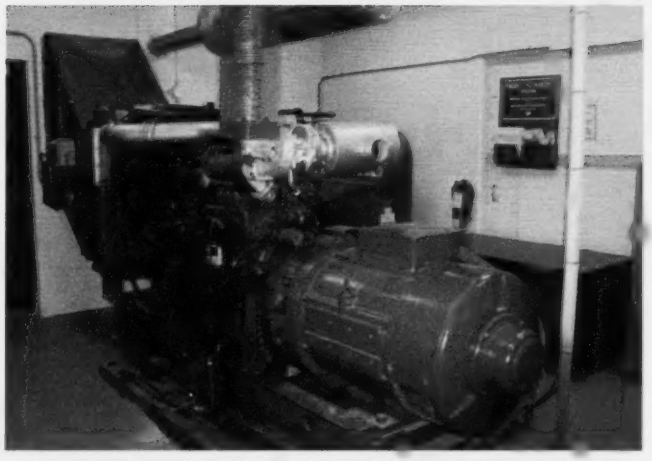
Risk categories are based on an individual water system's ability to safely provide drinking water from source to tap (e.g., from lake water to treatment and finally to distribution piping).

- A high risk category may be assigned to a facility that requires system improvements and increased monitoring — for example, a drinking water facility with an older, poorly maintained distribution system that may need to be upgraded.
- A moderate risk category may be assigned to a facility where routine monitoring is required to maintain appropriate water treatment levels, operator performance, and/or system and structural integrity.
- A low risk category may be assigned to a facility where minimal monitoring is required. Examples include a well that is of sound construction and has a consistent history of good water quality or a surface water system with consistent treatment protocols and regular operator oversight.

Table 8 provides a summary of the risk assessment results for small drinking water systems from the start of the program to December 31, 2011.

Table 8: Number of Risk Assessments for Small Drinking Water Systems as of December 31, 2011

Number of Risk Assessments	Finalized: In Progress:	6,990 2,831
Categories of Finalized Risk Assessments	High: Moderate: Low:	1,048 (15%) 1,398 (20%) 4,544 (65%)



High risk systems are being monitored through increased sampling frequency and re-inspection every two years to help ensure they can provide drinking water in a safe manner. Moderate and low risk systems are also monitored through routine sampling, but at a lower frequency and will be re-inspected every four years. The risk categorization of a small drinking water system may be updated as system improvements or upgrades occur and are assessed by a public health inspector.

In addition to those risk assessments that have been finalized or are in progress, 6,997 facilities with private water supplies were assessed or reviewed by public health units and were deemed to not meet the definition of a small drinking water system or are no longer in operation. Examples of systems that may fall into this category include systems that do not supply drinking water to the general public or have fewer water connections than the minimum required by regulation.

As a performance measure, the Ministry of Health and Long-Term Care is monitoring the implementation of the Small Drinking Water Systems Program by tracking the total number of risk assessments finalized, number of assessments in progress and those assessed but not meeting the small drinking water system criteria. To determine the progress of implementation, this total number is compared to the planning assumption of 18,000 small drinking water systems. As of December 31, 2011, 94.1 per cent of the program has been implemented.

REPORTING OF ADVERSE WATER QUALITY INCIDENTS FOR SMALL DRINKING WATER SYSTEMS

Small drinking water systems are required to sample their supplies for the presence of indicator bacteria (total coliform and *E. coli*) at a frequency outlined in the directive, or as set out in the small drinking water systems regulations made under the Health Protection and Promotion Act. When an incident is reported, system owners and/or operators work closely with public health inspectors to resolve the issue to protect drinking water users.

A total of 2,707 adverse water quality incidents have been reported by 1,875 small drinking water systems from April 1, 2009 to March 31, 2011.

Table 9 provides details of the adverse water quality incidents (AWQIs) by parameter type for small drinking water systems.

Table 9: Summary of Adverse Water Quality Incidents for Small Drinking Water Systems by Parameter Type for 2009-10 and 2010-11

Parameter Type	2009-10[1]		2010-11		All Years	
	# of AWQIs	% of AWQIs	# of AWQIs	% of AWQIs	# of AWQIs	% of AWQIs
Microbiological	887	73.8	1,105	73.4	1,992	73.6
Other[2]	303	25.2	369	24.5	672	24.8
Chemical/Inorganic	12	1.0	31	2.1	43	1.6
Total	**1,202**		**1,505**		**2,707**	

1 Since implementation of the Small Drinking Water Systems Program began in December 2008, AWQIs were subsequently reported in 2009 as a result of site-specific risk assessments and routine sampling by drinking water system owners/operators.
2 Other may include an observation of treatment malfunction, etc.

WATER INNOVATION LEADERS

RED BAY TENT AND TRAILER PARK

In June 2009, a public health inspector from the Grey Bruce Health Unit visited the Red Bay Tent and Trailer Park to conduct a risk assessment on the camp's small drinking water system. The system had no history of complaints but there were limited water sample results and little information was available about the well. In addition, no treatment systems were installed at the time.

The owner, Censina Mullett, was keen to work with the inspector and after some guidance, she obtained the well record from the Ministry of the Environment and located the well. After the initial risk assessment was completed, she secured the services of an accredited laboratory and obtained her Ministry of the Environment Basic Training Certificate. That winter, further system upgrades were made including primary and secondary disinfection. By the start of the 2010 season, Free Available Chlorine levels were being regularly tested and water samples were sent for testing to a licensed laboratory. As Ms. Mullet explains, "At the start of the process I didn't know much about the system and that was worrying. Now though, we have a much better system. It has become part of the routine and is one less thing to worry about."

As a result of the upgrades, a second risk assessment was conducted in the summer of 2010 and the risk rating for the system was improved. The safety of this system improved dramatically over a 12 month period, and the process was one of collaboration and learning. Ms. Mullet recalls, "Now I look back and think — that was easy, it wasn't a big deal!"

2010-11 LABORATORY LICENSING AND COMPLIANCE PROGRAM RESULTS

A key component of Ontario's drinking water safety net is the inspection of laboratories. All laboratories that are eligible to test drinking water are inspected to ensure they are operating in compliance with provincial regulations.

Inspections may include an assessment of several areas such as sample handling, testing methods, accreditation requirements and management practices. The inspection report identifies problem areas and includes guidance on how to address them.

INSPECTIONS AND ORDERS

In 2010-11, 52 licensed Ontario laboratories and one eligible, out-of-province laboratory tested drinking water in Ontario. Of the 106 inspections that were completed during this time:

- 53 were announced and 52 were unannounced (including one announced and one unannounced inspection for the eligible laboratory located outside Ontario), and
- One additional announced inspection was conducted for a laboratory re-location.

Table 10 shows a summary of the inspections for licensed and eligible laboratories in Ontario over the past four years.

In 2010-11, no orders were issued to any laboratory as a result of inspections. One licensed laboratory was issued an order due to an incident that occurred outside of the inspection timeframe. Table 11 provides a summary of the orders issued to different types of laboratories over the past three years. Details of these orders are published on Drinking Water Ontario.

Table 10: Summary of Laboratory Inspections in 2010-11, 2009-10, 2008-09 and 2007-08

Inspection Type	Licensed and Eligible Laboratory Inspections			
	2010-11	2009-10	2008-09	2007-08
Announced	53	52	52	56
Unannounced	52[1]	53[2]	52	53[3]
Other	1[4]	2[4]		
Total	**106**	**107**	**104**	**109**
Number of Laboratories (Licensed and Eligible)	53	53	52	56

1 During 2010-11, one laboratory voluntarily withdrew from the licensing program between its announced and unannounced inspections.
2 During 2009-10, one laboratory voluntarily withdrew and two laboratories joined the laboratory licensing program.
3 During 2007-08, three laboratories voluntarily withdrew from the licensing program between their announced and unannounced inspections.
4 Other inspections included laboratory pre-licensing or relocation inspections.

Table 11: Licensed and Unlicensed Laboratories that Received Inspection- and Non-Inspection- Related Orders in 2010-11, 2009-10 and 2008-09

	2010-11	2009-10	2008-09
Licensed Laboratories with Inspection-Related Orders			
Number of Licensed Laboratories that Received Orders	0	3	2
Number of Planned Inspections of Licensed Laboratories	103	104	104
Percentage of Licensed Laboratories that were Inspected and Received Orders	0%	2.9%	1.9%
Licensed Laboratories with Non-Inspection-Related Orders			
Number of Licensed Laboratories that received Non-Inspection- Related Orders	1	-	-
Unlicensed Laboratories with Non-Inspection-Related Orders	0	1	1
Total Number of Orders Issued to Licensed and Unlicensed Laboratories (Inspection and Non-Inspection)	**1**	**4**	**3**

TOP AREAS FOR IMPROVEMENT — LABORATORIES

In 2010-11, the ministry's inspection program of eligible laboratories identified the following four common improvement areas:

- Documenting that directions were provided to clients on how to use drinking water drop-off depots, or how to properly collect/handle and transport samples.
- Maintaining training records showing that appropriate staff have been trained to instruct clients how to use drop-off depots for drinking water samples and analysis.
- Developing a procedure on how total trihalomethanes results are obtained for previous quarters when analyzed by a different laboratory.
- Developing a procedure on how quarterly total trihalomethanes results are tracked for each drinking water system.

The ministry continues working with laboratory owners to improve their understanding of their responsibilities.



2010-11 CONVICTIONS

The ministry takes action in response to potential violations, as those who are responsible for delivering safe drinking water to the public are legally accountable for their actions.

Inspectors report potentially serious violations of our laws to the ministry's Investigations and Enforcement Branch. When necessary, investigations are conducted. If laying charges is recommended, a summary of the findings of the investigation is sent to a Crown Attorney in the form of a crown brief. The Crown Attorney reviews the brief to evaluate if there is a reasonable prospect for conviction and to assess if it is in the public interest to proceed with a prosecution.

As shown in **Table 12**, during 2010-11, 14 cases with convictions related to 13 drinking water systems and licensed laboratories resulted in fines totalling $199,300. Details of these convictions are published on Drinking Water Ontario.

Table 12: Summary of 2010-11 Convictions for Drinking Water Prosecutions by Facility Type

Facility Type	2010-11 Total Cases with Convictions	Number of Systems or Laboratories	2010-11 Fines
Municipal Residential Drinking Water Systems[1]	3	3	$66,000
Non-Municipal Year-Round Residential Systems[2]	6	6	$74,300
Systems Serving Designated Facilities	3	2	$24,000
Schools and Day Nurseries	-	-	-
Licensed Laboratories	2	2	$35,000
Total	**14**	**13**	**$199,300**

1 In 2010-11, one private corporation was convicted and fined $30,000 for charges related to drinking water offences at one municipal drinking water system.
2 In 2010-11, one individual was convicted and fined $3,500 for charges related to drinking water offences at a non-municipal year-round residential drinking water system. Two separate cases involving non-municipal year-round residential drinking water systems do not have fines associated with the convictions as they were given suspended sentences. While there were no fines imposed, in one case a probation order was issued against the defendants and in the other case a court order was issued.

CLOSING STATEMENT

As we continue to ensure the proper safeguards for drinking water protection are in place, the upcoming year will further strengthen our drinking water safety net. Source protection plans will be completed and submitted to the Minister by local source protection committees. We will continue to help ensure that municipalities meet the requirements of their municipal licences and accreditation and by the end of 2012, municipal officials will be held to a statutory standard of care to strengthen local drinking water oversight.

We will continue to work with our federal and First Nations partners to jointly deliver the Canada-Ontario First Nations Drinking Water Improvement Initiative.

Ongoing vigilance, continued collaboration with our partners and the never-ending search for innovative improvements are keys to providing safe drinking water in Ontario. You can take great pride in the dedication of drinking water professionals and their commitment to ensuring Ontario's drinking water is of the highest quality.

Please let me know what you think of this report. I also welcome any ideas and suggestions you might have for future editions. You can reach my office by email at drinking.water@ontario.ca.



GLOSSARY

Backwash water treatment system: is a treatment system that treats filter backwash water so that it can be discharged safely. The level of treatment depends on the receiver (natural environment or a sewer). Filtration is one of the water treatment processes (for the separation of solids), which requires periodic cleaning by backwashing the filter media by pumping water in the direction opposite to filtration flow. The spent water used in back washing the filters is highly concentrated with solids and requires further treatment before it can be discharged.

Contravention Order: the purpose of a Contravention Provincial Officers Order is to address a contravention of an Act, Regulation, order, notice, direction, requirement or report or a term or condition of an approval/permit. Contravention orders can be issued to persons who are either currently contravening or have in the past contravened an Act, Regulation, order, notice, direction, requirement or report or a term or condition of an approval/permit. A contravention order may require the ordered party to comply with any directions set out in the order within the time specified.

Drinking Water Systems Serving Designated Facilities: drinking water systems serving, for example, children's camps, daycare centres, schools or health care facilities. These systems fall under the five categories of non-residential and seasonal residential systems defined in O. Reg. 170/03. They are large municipal non-residential, small municipal non-residential, large non-municipal non-residential, small non-municipal non-residential and non-municipal seasonal residential categories of drinking water systems.

***E. coli (Escherichia coli)*:** a species of bacteria naturally present in the intestines of humans and animals. If animal or human waste containing *E. coli* contaminates drinking water it may cause gastrointestinal disease in humans. Most types of *E. coli* are harmless, but some active strains, especially O157:H7, produce harmful toxins and can cause severe illness.

Free Available Chlorine: is the residual amount of chlorine in treated drinking water.

Local Services Boards: provide services in communities in areas of Northern Ontario without municipal structure. Local Services Boards are established pursuant to the Northern Services Boards Act administered by the Ministry of Northern Development and Mines. A local services board may provide various services (including, in some cases, water services) to inhabitants of the Board area (the geographical area within which the Board can exercise its

jurisdiction). Drinking water systems run by Local Services Boards are generally categorized as non-municipal year round residential systems under O. Reg. 170/03.

Municipal residential drinking water systems: drinking water systems or part of a drinking water system that serve six or more private residences that meet the definition of municipal drinking water system under the Safe Drinking Water Act and its regulations. Includes the categories of large municipal residential and small municipal residential drinking water systems under O. Reg. 170/03.

Non-municipal year-round residential drinking water systems: non-municipal drinking water systems (other than seasonal residential systems) that serve a major residential development (six or more private residences) or a trailer park or campground with more than five service connections. These systems are a single category defined in O. Reg. 170/03.

Preventative Order: an order issued by a Provincial Officer where considered necessary for the purposes of the Safe Drinking Water Act (which include protecting human health and preventing drinking water health hazards), even where no contravention has occurred yet. A Preventative Measures Order is used to prevent possible future adverse effects.

Radionuclide: an unstable form of a chemical element that decays and results in the emission of nuclear radiation.

Small Drinking Water Systems: are regulated under the Health Protection and Promotion Act and its small drinking water system regulations. O. Reg. 319/09 (Small Drinking Water Systems) and O. Reg. 318/09 (Transitional – Small Drinking Water Systems) made under the Health Protection and Promotion Act specify which systems are small drinking water systems. In general, these are stand-alone drinking water systems that supply water for consumption at public facilities such as restaurants, seasonal trailer parks, summer camps, community centres, libraries, gas stations, motels, churches; etc.

Trihalomethanes: are disinfection by-products of drinking water chlorination and can be formed during the treatment process.

Turbidity: a visible haze or cloudiness in water caused by the presence of suspended matter, resulting in the scattering and absorption of light. The cloudier the water, the greater the turbidity.

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